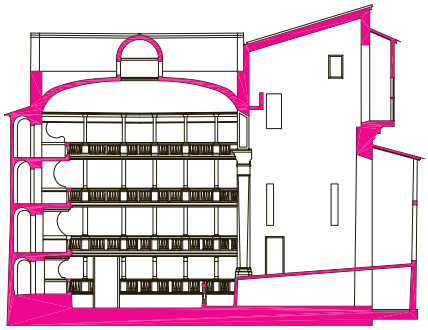
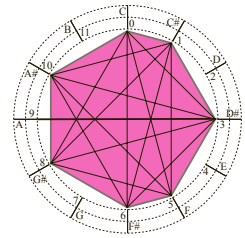
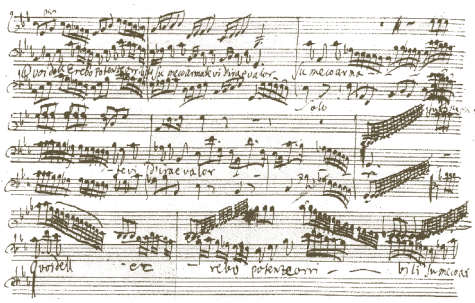
Georgia Tech College of Architecture

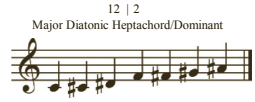
Ph D Focus

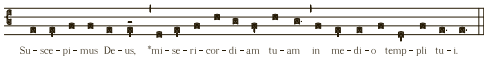
Spring 2007

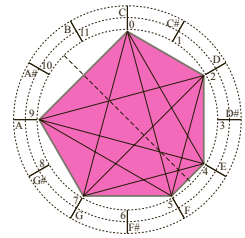


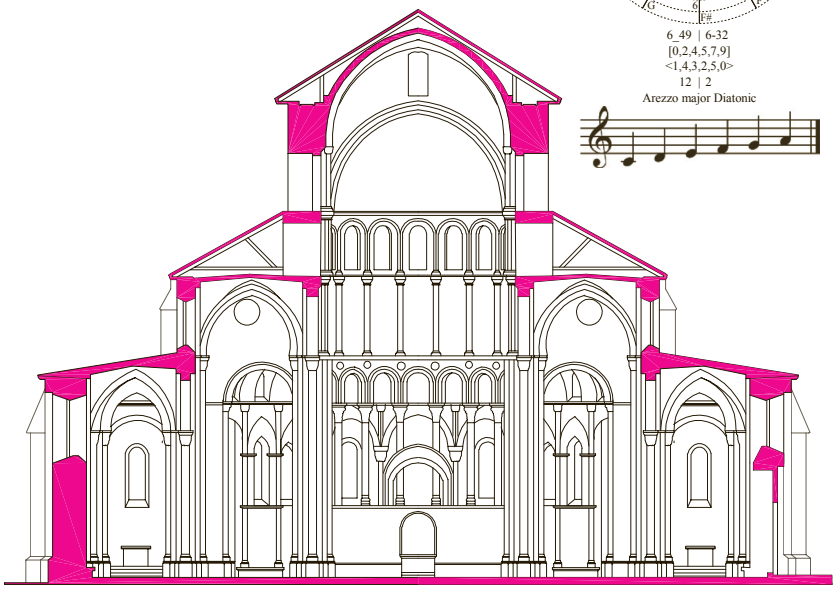












Lewcock contrasted a section through an Opera House, c. 1700, that can be paired to a score by Handel, to a section through the Church at Cluny that can be paired to Gregorian Chant. Dr. Frank Clark (director, music-COA) showed that The Handel score is based on isometric transformations of the 7-tone scale drawn by Economou (the excerpt begins in f minor, modulates to the relative major, Ab Major, and then returns to f minor), while the Gregorian Chant corresponds to a 6-tone interpretation of the scale.

ARCHITECTURE AND MUSICAL FORM

The Dean's Symposium on Expanding Music Through Technology (March 3rd) explored the interaction between technology and art, with contributions by Ph.D. faculty.

Dr. Ron Lewcock, an authority on architectural acoustics and author of the corresponding entry of the Grove Dictionary of Music, discussed how buildings act as musical devices that condition the potential of the human voice and musical instruments. Lewcock demonstrated that the development of Western music interacted with changes in architectural design. For example, the long reverberations of early churches, with their large flat surfaces at considerable distances from the sound sources, would have confused performances of fast or complex music, and resulted in preferences for slow, simple-line Gregorian chant and the use of the organ. He went on to show how later changes in the design of churches, with their more complex piers and moldings, and wider openings into deep aisles and chapels, enabled the reverberation times to be reduced and made smoother, and thus permitted the development of polyphony - with more complex, faster musical patterns. This trend culminated in the Parisian Notre Dame style of early two and three voice motets. With the introduction of the smaller, simpler "hall church", influences from popular music appeared in church music, with three and four-line polyphony and the introduction of instrumental parts as with music written for La Sainte Chapelle in Paris. The lecture continued with music composed for specific buildings throughout the period of the 14th to 20th centuries, including examples of music written for performance in St. Peter's, Rome by Palestrina, by Monteverdi for St. Mark's, Venice, by Mendelssohn for the old Gewandhaus in Leipzig, by Berlioz for Les Invalides in Paris, and by Wagner for the Bayreuth Festspielhaus. Lewcock concluded with the performances in the new Disney Concert Hall in Los Angeles.

Dr. Athanassios Economou discussed the mathematical structures that underpin musical scales and architectural proportions in the classical tradition and in the 20th century. Dr. Economou presented original graphic representations of all possible musical scales based upon the equal temperament. Extending the argument beyond the traditional focus on ratios, he presented an interactive program that interprets Palladian villas according to musical tones and colors, taking into account not only the proportions of individual rooms, but also the location of a moving observer and the extent to which different rooms come into her field of vision. The purpose was not to model the experience of architectural proportion, but rather to demonstrate how mathematical algorithms help translate abstract structures into alternative sensory inputs. An account is offered in: Economou A, Swarts M, 2006, "Performing Palladio", International Journal of Architectural Computing, issue 03, Volume 04, pp 47-61

Thomas Galloway

The Dean of the College of Architecture, Dr. Thomas Galloway, passed away March 11. His many contributions to the growth of the College, to Georgia Tech and its relationship to the City of Atlanta, and to the City of Atlanta itself since he assumed leadership in 1992 have been celebrated elsewhere. *Ph.D. Focus* remembers Dr. Galloway through statements of Ph.D. alumni.

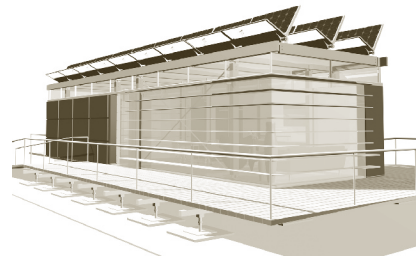
Dr. Mahbub Rashid (1998 graduate and Associate Professor at the University of Kansas) took the course on planning theories that Dr. Galloway taught in the early years of his tenure at Tech. Dr. Rashid remembers Dr. Galloway as a passionate and selfless teacher who took pride in his teaching and students. "He always encouraged us to critically discuss planning issues and become familiar with alternative paradigms so that we could think outside the box."

Dr. Sung Hung Kim (1995 Graduate and Provost of Planning and Research at the University of Seoul) writes: "My recollection of Tom goes back to the summer of 1992 when he came to Georgia Tech. Since then, as a Ph.D. student and his assistant, I watched how he changed the College, firmly steered us to face the new challenges that confront our professions and supported the growth of research and interdisciplinary inquiry."

Dr. Aarati Kanekar (2000 graduate and Associate Professor at the University of Cincinnati) writes: "Supportive, decisive, and understanding are the first three things that come to mind when thinking of Dean Galloway. He was absolutely remarkable in not only initiating the Heffernan Archival Research Center but also taking the opportunity to support doctoral students in History, Theory and Criticism in Architecture. I shall always be grateful to him for giving me peace of mind and making my doctoral studies enjoyable and creative."

The sentiments of many are well echoed in the statement by historian and critic Dr. Jane Wolford (2004 graduate): "Excellence spoken with grace and humor was the language of Dean Galloway's life. As an academician he always strove for excellence. As a city planner he worked tirelessly for the good of society and rooted Georgia Tech in a revitalized city setting he helped to create. As a skillful and caring teacher, he not only critiqued my dissertation as a committee member, but always went one step further and took the extra time to explain his comments personally to make sure I understood and learned from the experience. His cheerleading efforts for Georgia Tech's architecture department brought in necessary funds to support its quest for excellence. The love for his family and friends was heartwarming. His love for his wife Sharon truly was an inspiration to us all. Dean Galloway cared --- and made a huge difference in our lives. He will be sorely missed. May his legacy live on in Georgia Tech's Architecture Department and in our hearts."

Simulation enhanced prototyping of an experimental solar house

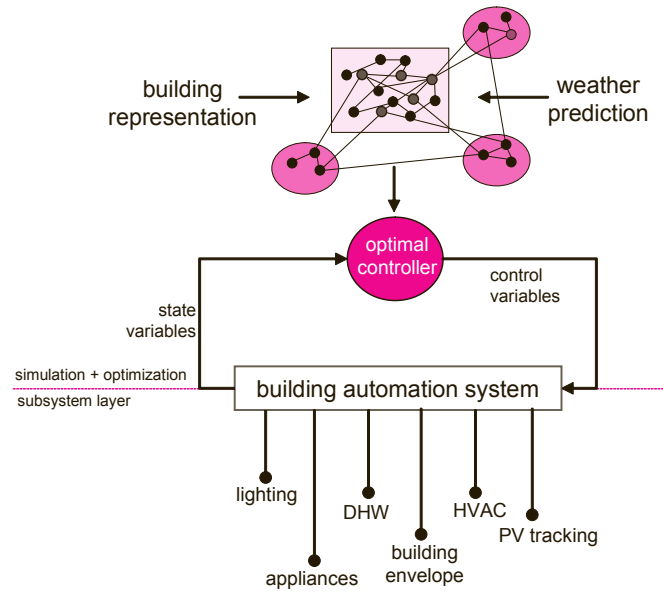


Georgia Tech is participating in the Solar Decathlon 2007 competition sponsored by the Department of Energy. The competition invites 20 international universities to design, build, and operate an 800 sq.ft. solar powered house within a tight set of performance criteria. The nature of the competition predisposes the project to parallel objectives of pushing boundaries in design and construction, minimizing energy use, and operating the house under a given precise set of environmental conditions. The participating teams will be evaluated in October 2007 within a range of subjective and objective contests such as design, engineering, energy balance, comfort, water heating, lighting,

While the objective scores test the house as it operates during the competition week, the subjective scores are given by panels of juries. In the 2002 competition, the subjective scores focused on innovation and market appeal of technologies as they are used in the house. This year, a bulk of the subjective scores will evaluate how the teams assess their own house during the design process and use the assessments to inform design-decisions; also, how they project its operation annually and over the life-cycle of the house. This change demonstrates the thrust by the Department of Energy towards a strong design analysis process that is supported by means of simulation and monitoring.

Under the guidance of Professors Augenbroe, Gentry, and Choudhary, an interdisciplinary team of engineering and building technology students are developing an innovative set of computational tools to assess the performance and operation of the house. The team chose to use this project to argue for a need-based and tool independent analysis process that will support our house from its development, to incremental testing and final configuration. This is a three part development. In the first phase the team developed a lumped finite element model in which the "lumps" and flows can be replaced as needed when more detailed representations of components become available. This model already gives us a huge advantage because our house incorporates novel technologies for which, in some cases, no fully tested and validated tools exist as yet.

In the second step, specific more detailed simulation components are added -- to be replaced later by their real world counterparts. The substitution of a simulated component with a real component is enabled by special interface modules and suitable digital/analog interfaces. In the third step we will have a full size calibrated model of the house with on-site real-time control system that manages the interaction of all house components and gives us the edge in control features that can allows us to be good "energy managers" of the house when it competes in October.



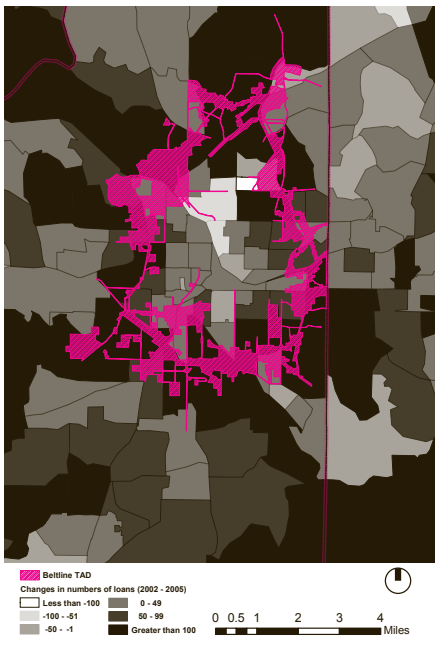
In a wider context, this project feeds back to ongoing research issues within the building simulation and design consulting community by offering non-standard, process specific, context-driven protocols for informing design across incremental design cycles.

Neighborhood change: the Atlanta Beltline

The proposed Atlanta Beltline involves the redevelopment of a 22-mile disused rail line to provide light rail transit, green space, trails and new residential and commercial projects. Associate Professor Dan Immergluck and Ph.D. student Yun Sang Lee are examining the impacts of the proposed Beltline on home-buying and neighborhood change in areas close to the Beltline Tax Allocation District (TAD). The aim is to determine whether speculative processes affect property values and neighborhood change well before ground is broken for the project. Developers, investors, and home buyers are likely to consider expected future appreciation when purchasing real estate in areas close to proposed, large-scale developments. While increased property values may reflect expected advantages from future developments they can also potentially displace incumbent residents, particularly in lower-income neighborhoods.

The research utilizes federal Home Mortgage Disclosure Act data on actual in-movers and investors in single-family homes in neighborhoods near the Beltline. The figure below shows that many neighborhoods around the Beltline have seen substantial increases in the number of homes purchased in recent years. The researchers will be looking much more closely at these data, including examining the incomes of the recent home buyers in order to identify possible gentrification trends. They also plan to investigate Fulton county property sales data to identify value trends at a more precise geographic level.

Important planning and policy issues are raised by this research, including implications for neighborhood stabilization and development planning, policies aimed at mitigating displacement, and community benefits provisions for TADs and similar subsidies.



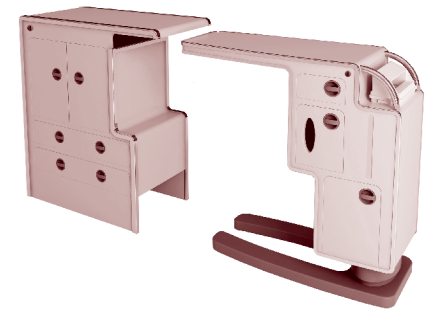
The patient room of the future

The Fall 2006 Patient Room of the Future class, sponsored by Steelcase, was an interdisciplinary effort to anticipate design needs of patients, families, and staff. Students from architecture, industrial design, computer science, and health system engineering, visited area hospitals with their nurse classmates. Together, seasoned nurses and fresh eyed designers took a second look at the current hospital state, and brain stormed the future of patient care.

What does the future look like? Safety and privacy reign in the bathroom, with a seat on a track that moves about the room, and a waist high shower curtain. Remote communication with families and video recorded physician updates are the highlights of the interactive television in the patient room. Staff and patient organization in a multifunction headwall, that features a Murphy bed for families. Active wall systems allow for patient privacy and nurse surveillance. A multi-use cart enables clinicians to perform procedures with greater adherence to efficiency, safety, and infection control.

These innovative projects were showcased in December during an open house review attended by a nationwide audience of designers, clinicians, and educators. Plans for the Fall 2007 Patient Room of the Future class are on the board; the focus is pediatrics.

Faculty: Ellen Do, PhD, Architecture and Computing; Craig Zimring, PhD, Architecture; Sabir Kahn, PhD, Architecture; David Cowan, Health Systems Engineering; Abir Mallick, PhD, Industrial Design; Claudia Weingardner, PhD, Industrial Design; Gerri Lamb, PhD, RN, Nursing; June Conner, RN, Nursing.
PhD Students: Michelle Ossmann, RN, Selen Okcu, Bo Seo.



The CareCart provides staff with a dedicated work surface with both mobile and stationary components. The mobile cart extends over the patient bed for procedures and allows bilateral access to immediate sharps disposal, clean gloves, necessary small supplies, and trash. The stationary component houses larger frequently used items, and can be used as an individual locker for patient medications.
Project participants: Michelle Ossmann, PhD Student
Ted Ullrich, Master of ID student
Xiaoyi Ye, Master of ID student

The Patient Interactive Communication and Learning System (Pils) was designed to amplify patient communication by combining traditional communication tools with digital video technology. These innovations include: video chat technology for nurse call systems and remote families, video capture to record physician updates, a touch-screen interface for patient use, and a digital whiteboard for staff and family.
Project participants: Travis Reineke Fischer, Master of Computer Science student
Camilo Vargas, Master of ID student
Taryn Davis, Master of Health Systems Engineering student

AEC integration and LEED certification

Theses

The implementation of the Leadership in Energy and Environmental Design (LEED) rating system during the past decade profoundly altered new building construction. Especially affected were design and operational issues that include energy and water use, indoor health, recycling for occupants, access to mass transit, materials impacts, landscaping, construction waste management, and maintenance. However, very little is known about the cumulative effects of the rating system across different phases of the project life cycle, such as planning, architecture, engineering, construction and operational facility management (AEC+P+F). As project stakeholders embrace AEC+P+F integration in the quest for improving project performance indicators (e.g., cost, time, quality, etc.), the impact of LEED on this integration, or vice versa, is still unknown. Moreover, the implications of the delivery system in LEED attainment are not clearly associated with the level of AEC+P+F integration.

Assistant Professors Kathy Roper and Dr. Daniel Castro Lacouture worked with student Karthik Ramkrishnan to address this issue. Based on a detailed analysis of the project life cycle under a common delivery system used for LEED-certified buildings, and on the rating system criteria itself, a matrix was proposed. The matrix contains the interactions that take place at every stage of the project that have implications on the LEED rating criteria. An innovative delivery system, dubbed "Green Project Delivery System", emerged from this analysis. This new system incorporates several conclusions reached in the study:

1. The design and construction project schedule may be compressed due to more opportune decision making.
2. Costs may be also reduced due to expediting material ordering, and also as a result of the schedule compression.
3. The potential AEC+P+F integration due to the adoption of green rating systems will address one of the most important lean principles, which is the under utilization of people.

Dr. Non Khuncumchoo: *Maintenance Record Analysis toward Proactive Maintenance Policies*
Advisor: Dr. Linda Thomas Mobley

The study assists facility managers in establishing a proactive roof maintenance plan. Two methodologies, Historical Maintenance Data Analysis (HMDA), and Roof Service Life Prediction (RSLP) are used. HMDA hypothesizes that a mathematical model can reveal potential roof leak causes. The RSLP is based on the assumption that the first-time leak has a linear relationship with the estimated service life (ESL) of the roof.

This research demonstrates that roof maintenance records can be used to identify factors that are likely causes of roof leaks in a mathematical model. Roof leaks are not totally random events and can be predicted. Three parameters (Age, Workmanship, and Roof Repair) have a significant impact on the roof leak's odds. The 'Factor Method' performed in the RSLP confirms the existence of linear relationships between the ESL and the first-time leak. The extents of correlation are found to be low to medium.

The ESL provides a reasonable estimation of a roof maintenance-free period. When ESL information is used in conjunction with knowledge obtained from HMDA, the new synthesis of knowledge will enable the facility maintenance professional to develop and schedule a proactive roof maintenance plan.

Dr. Shariar Makarechi: ***Automation Performance Index***
Advisor: Dr. Roozbeh Kangari

Automation is intended to improve overall building performance. Building Automation Systems (BAS) are attractive and popular due to their promise of increased operational effectiveness. BAS can be optimized and a well-designed and well-implemented BAS is expected to increase a building's overall appeal and value as a result of improvement to its performance. In order to improve the level of automation in buildings, a measurement tool in the form of a performance index is needed. The goal of this research is to quantify a building's level of automation-performance. The specific objective is to develop an Automation Performance Index (API) model for evaluating the extent of a building's automation-performance. A methodology is outlined with ten tasks to accomplish the goals of this research and a criterion for each task is described.

An extensive literature research and expert survey are performed to identify the key parameters that influence the performance of BAS. Seminars related to the building automation and commissioning fields were also attended to obtain the views of practitioners, manufacturers' experts, as well as scholars in the field of building automation and performance commissioning. A Delphi method of research approach is conducted through a series of interviews and surveys of industry and academia experts. The feedback from experts and the research from literature, industry and academic resources are combined, classified and categorized for identification of significant parameters around which Automation Performance Index (API) model is defined.

Dr. Lynn Patterson: ***Local Economic Development Agencies' Support for Construction and Deomolition Recycling***
Advisor: Dr. Nancey Green Leigh

The construction & demolition (C&D) recycling industry (1) creates economic opportunity through business activity; (2) promotes equity through workforce training and partnerships; and, (3) helps to conserve natural resources through the reuse, remanufacturing and recycling of C&D debris.

This research examined the current state of local economic development agency support for the C&D recycling industry in three ways using data from a national survey of local economic development agencies. First, the array of activities local economic development agencies used to support the industry was examined. Second, distinguishing policy and contextual characteristics of agencies that supported the industry were identified. Third, agency support for C&D recycling was assessed to determine if it fit within the rational planning model. Results showed that a combination of traditional, progressive and sustainable local economic development tools were adapted and created to satisfy the needs of this specialized industry. Discriminant analysis was conducted using both primary and secondary data to identify key characteristics of the supporting agencies. These characteristics included previous support for the general recycling industry; the use of environmental enterprise zones and eco-industrial parks; and knowledge of local landfill capacity issues. The descriptive and statistical analyses were combined with the survey's qualitative responses to determine that local economic development agencies did not operate under a rational planning model with regard to C&D recycling. Instead, local economic development agencies use both incremental and reactive planning strategies in their support of the industry. The study concluded with policy recommendations to increase local economic development agency support for C&D recycling.

News

Papers

Joseph A, Zimring C, 2007, "Where Active Older Adults Walk: Understanding the Factors Related to Path Choice for Walking Among Active Retirement Community Residents" *Environment and Behavior* **39** (1), 75-105

Craig R M, 2006, "Two by Ames: Encounters with History and the Modern Aesthetic," ARRIS XVII 32-52

Craig R M, 2006, "Pilgrimage Route to Paradise: The Sacred and Profane along the Dixie Highway," in Stager C and Carver M A (eds) *Looking Beyond the Highway: Dixie Roads and Culture*, (Knoxville: Univ. of Tennessee Press)

Immergluck D, Smith G, 2006, "The Impact of Single-family Mortgage Foreclosures on Neighborhood Crime" Housing Studies 21(6): 851-866

Immergluck D, Smith G, 2006, "The External Costs of Foreclosure: The Impact of Single-Family Mortgage Foreclosures on Property Values" Housing Policy Debate 17 (1): 57-79

Lee G, Eastman C M & Sacks R, 2007, "Twelve Design Patterns for Integrating and Normalizing Product Model Schemas", *Computer-Aided Civil and Infrastructure Engineering*, 22 (3) 163–181

Peponis J, 2006, "The city as search engine", *Elelef special issue For the Right to the City*, 37-44 (in Greek), 45-50(in English)

Yang D, Eastman C M, 2007, "A Rule -Based Subset Generation Method for Product Data Models" C*omputer-Aided Civil and Infrastructure Engineering*, 22 (3) 133–148

Proceedings

Abdelmohsne S M, Do E Y-L, 2007, "TangiCAD: Tangible Interface for Manipulating Architectural 3D Models" Proceedings of the 12th Internation CAADRIA Conference (Nanjing, China) pp 29-36 http://www.caadria2007.org/

Gim T-H, 2007, "Level of Environmental Consideration Embedded in the Tool for Evaluating Suitability of the Korean New Capital Candidate Sites", in Proceedings of the 4th International Conference on Planning and Design.

Gim T-H, 2006, "Environmental Site Selection Criteria for the Korean Capital Relocation Project", in Proceedings of Selective Papers of the 6th International Conference on Sustainable Ecocity Development.

Wei L P, Do E Y-L, Eastman C M, 2007, "On Context of Content: A Comparative Methodology Review of How HCI and Mass Communication Analyze Blogs and Social Media" in Proceedings of the International Conference on Human Factors in Computing- CHI 2007 (San Jose) http://www.chi2007.org

Grants

Craig Zimring, Godfried Augenbroe, Sheila Bosch, Ellen Do were recipients of an 18 month, $750 K grant from the Robert Wood Johnson Foundation for their project entitled: Building High Performance Healthcare: Physical Environments Transforming Quality and Safety

Brian Stone was awarded$4800 from the Georgia Tech Foundation for "An analysis of land use and climate change in large U.S. cities".

Activities

Robert M. Craig chaired the session on "National Identity: Construction of Space as Ethnic Identity" at the Nineteenth Century Studies Association conference on Race & Ethnicities in the Nineteenth Century in March, 2007. Also, as secretary of the Society of Architectural Historians, he attended the Executive Committee and Board of Directors meetings in April, 2007, as well as the meeting of the Board of Directors of the Charnley-Persky House Museum Foundation

Ellen Yi-Luen Do served on National Science Foundation Review Panel for CISE (Directorate for Computer & Information Science & Engineering) on IIS-HCC (Information & Intelligent Systems - Human-Centered Computing)

John Peponis chaired a panel (Dr. Jean Wineman, Dr. Anne Vernez Moudon, Dr. Ruth Conroy Dalton) to evaluate research proposals in Architecture and Urban Planning, for the 2007 funding round of the Portuguese Foundation for Science and Technology.

Craig Zimring is an Advisory Board Member, American Academy of Nursing Tech Targets Task Force. He is also a member the Joint Commission for the Accreditation of Healthcare Organizations Roundtable on the Hospital of the Future

Presentations

Ai N, 2006, "Myth of Landfills: Burden or Wealth" The 47th Association of Collegiate Schools of Planning (ACSP) Conference, Ft. Worth, Texas

Craig R M, 2007, "Biology and Architecture: materials, ethnicity, culture and place as determinants of 19th century building form" Nineteenth Century Studies Association (NCSA), Susquehanna, PA

Herbert C, Cama R, Mare G and Zimring C, Dublin Methodist Hospital Lecture Series - Evidence Based Design in Action, Healthcare Design 06

Do E Y-L, 2007, "Understanding Geometry and Semantics for Sketching", invited speaker, Workshop on Pen-Centric Computing Research, Microsoft Center for Research on Pen-Centric Compting of Brown University and Microsfot Research: http://pen.cs.brown.edu/news.html

Do E Y-L, 2007, "Making Creative Computing - Design, Art, Craft, Science: Making and Creativity", Science of Design Symposium, Humboldt University: http://www.humboldt.edu/~sod/symposium/

Kim J, 2006, "Model-Prototype-Follower Framework for the Evaluation of an Urban Design Movement: Transition from Theory to Practice of New Urbanism on a Neighborhood Scale" The 47th Association of Collegiate Schools of Planning (ACSP) Conference, Ft. Worth, Texas

Lee D, 2006, "Uneven Exposure of Low-Income People to Floods: A Case Study of Austin, TX", the 47th Association of Collegiate Schools of Planning (ACSP) Conference, Ft. Worth, Texas

Leigh N.G., M. J. Realff, N. Ai, S. P. French, C. L. Ross, B. Bras, 2007, "The Role of Product Inventory Estimates in Regional Waste Diversion Impact Analyses: An Atlanta Case", the 7th International Conference on Urban Planning and Environment (UPE7), Bangkok, Thailand

Leigh N.G., 2007, "Gun Control in Local Economic Development", 2007 Annual Meeting of American Association of Geographers (AAG)

Peponis J, Vialard A, Scoppa M, 2007, "Plan : planning :: constitution : change. Measures, networks and principles", Symposium on Constantinos Doxiadis and His Work, Benaki Museum, Athens

Philips D, Addicks L, 2006, "Developing an applied and integrated internship program in residential property management", HERA conference, Cornell University

Alumni

Dr. Yoon Kyng Choi, (1991 graduate, Professor, Chungang University, Korea) is currently working as Professional Advisor of International Competition for the Dongdaemun World Design Park and Complex (www.english.seoul.go.kr). He is also working as Advisor to organize the International Competition for the Administrative Complex of Korean Government. Dr. Choi is the author of a book, *Society and Space* (2004; in Korean). His publications include "The Spatial Structure of Power: Traditional Villages and Houses in Korea" (Environment and Planning B, 2003), "The Morphology of Exploration and Encounter in Museum Layouts" (Environment and Planning B, 1999). He is a recipient of Schevening Scholarship from the government of the United Kingdom. He acted as Professional Adviser for International Competition for the Seoul Opera House and International Competition for the Prehistory Museum.

Dr. Carol Flores (1996 graduate, Associate Professor at Ball State University, Indiana) got two distinctions for her book *Owen Jones: Design, Ornament, Architecture & Theory in an Age of Transition* (Rizzoli, 2006): she will receive the Henry-Russell Hitchcock Book Award for 2007 by The Victorian Society in America; and, her book has been cited as one of the best books of the year by critic Andrew Mead, for *The Architects' Journal*.

Dr. Saif Haq (2001 graduate) is Associate Professor and Coordinator of the PhD Program in Land use Planning, Management, and Design (LPMD), at Texas Tech University. He is currently working as part of an interdisciplinary research team on Patient Safety in hospital buildings. Dr. Haq is a recipient of a grant from Boelter Design Group.

Dr. Richard L. Hayes, CAE, AIA, Ph.D. (1995 graduate) is now Managing Director Knowledge Resources for The American Institute of Architects (AIA). Dr. Hayes is currently overseeing the Institute's research initiatives, including reformulating the AIA's research priorities and stewarding a three million dollar research endowment. Under his direction an Architectural Research Summit was held at the University of Washington in March of this year. At that summit, the following priorities were established: Sustainability (e.g., consequences of global demand for resources, climate change mitigation, regenerative/disassembly buildings, carbon neutral buildings); limitations of water availability on buildings, urbanization (e.g., impacts of aging infrastructure, optimizing conditions for human development); demographic measures for public health and well-being; energy consumption and better metrics for building performance (e.g., daylighting versus artificial light); ergonomics for users of particular facilities (e.g., movement patterns, next generation flexible facilities); improvements to defining the functional requirements of facilities; relationship of buildings to community identity, heritage, and the broader ecological function (i.e. urban form and wellness); and integrated practice collaboration models.

Dr. Debajyoti Pati (2005 graduate, Director of Research, HKS Architects, Dallas) is currently working on clinical efficiency, and staff and patient well-being in acute and critical care environments, spanning several not-for-profit hospitals across the United States. He directs the firm's healthcare operations and planning research, and develops modalities for representing research findings for end use in programming and design in 17 US and worldwide HKS offices. Supported by healthcare designers, registered nurses, respiratory therapist, pharmacists, and medical equipment planners, his team's work has been accepted for presentation in numerous prestigious forums including the AIA national convention, Healthcare Design, PDC, Healthcare Facilities Symposium, and EDRA. Recently, his views on healthcare research were sought by the esteemed Express Healthcare Management Newspaper of the Indian Express Group.

Dr. Mahbub Rashid (1998 graduate, Associate Professor of Design, University of Kansas) has received a research grant from Herman Miller (about $100,000.00) during the 2006-2007 academic year to study the effects of university classroom design on learning outcomes. With Sally Augustin and others, Dr. Rashid is organizing a workplace network intensive on workplace design and culture at the EDRA conference, Sacramento, CA, May 30, 2007.

Saif Haq's research shows that space syntax variables predict movement in real (above) and virtual (below) hospital environments, thus confirming earlier results by Ruth Conroy Dalton.

PhD Focus

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